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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,382	09/10/2003	Jason A. Graetz	26-06	6022

23713 7590 05/15/2008

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EXAMINER	
LEE, CYNTHIA K	

ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/660,382	GRAETZ ET AL.	
	Examiner	Art Unit	
	Cynthia Lee	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-26 and 28-36* is/are pending in the application.

4a) Of the above claim(s) *8-25 and 29-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,26,28 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/2/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

This Office Action is responsive to the amendment filed on 10/11/2007. Claims 1-3, 5-26, 28-36 are pending. Claims 8-25 and 29-35 are withdrawn from further consideration as being drawn to a non-elected invention. Applicant's arguments have been fully considered and are persuasive and 35 USC 102 rejection has been overcome. However, upon further consideration, the instant claims are rejected under new grounds of rejections. Claims 1-3, 5-7, 26, 28, 36 are non-finally rejected for reasons stated herein below.

Information Disclosure Statement

The Information Disclosure Statement (IDS) filed 11/2/2007 has been placed in the application file and the information referred to therein has been considered.

Election/Restrictions

Applicant's election of I-b of lithium alloy silicon nanofilm in the reply filed on 10/11/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

After consideration of the restriction by the Examiner, it is noted that the species I-a, I-b, I-c, and I-d as grouped in the Restriction requirement mailed 7/11/2007 are regrouped as follows:

Species I An electrode and electrochemical cell comprising nanofilm or a lithium alloy, claims 1-3, 5-7, 26, 28, 36.

Species II An electrode and electrochemical cell comprising a silicon nanoparticle or a lithium alloy, claims 8-12, 29-31.

Since, the Applicant elected lithium alloy silicon nanofilm in the response filed 10/11/2007, claims 1-3, 5-7, 26, 28, 36 were fully considered. Claims 8-12, 29-31 are withdrawn from consideration as being drawn to a non-elected invention.

Specification

The Specification is Objected to because Example 6 states that the thin amorphous silicon films synthesized according to Example 2. It is unclear if the Applicant means Example 2, or Example 1 because Example 2 is drawn to nanocrystalline silicon clusters, whereas Example 1 is drawn to a nanostructured silicon film. Applicant is advised to make the record clear.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "substantially" is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 2, 5, 6, 26, 28, 36 are rejected under 35 U.S.C. 102(a) as being anticipated by Park (US 2002/0048705).

Park discloses a electrochemical cell comprising an electrode comprising a silicon layer [0014]. It is noted that lithium forms an alloy with silicon during charging/discharging [0012]. Table 1 discloses that the thickness of Si layer is between 70 and 200 angstroms. The films can be amorphous or crystalline [0042].

Claims 1, 2, 5, 6, 26, 28, 36 are anticipated by Park.

Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 7 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Park (US 2002/0048705).

Park discloses all the limitations of claim 1 and are incorporated herein.

Regarding claim 3, Park does not expressly disclose that the lithium alloy has a theoretical shoichiometry LixSi, and x is at least 2.1. However, it is noted that x=2.1 corresponds to a capacity of 2000 mAh/g, as disclosed in the Specification par. [0045]. Example 6 of the instant Specification describes a silicon film electrode with a thickness of 100nm with a capacity of 2000 mAh/g. The Examiner notes that the electrode of Park has a similar thickness as the Applicant's silicon electrode, and thus also has a theoretical shoichiometry LixSi, and x is at least 2.1. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. In re Robertson, 49 USPQ2d 1949 (1999). The courts have held that claiming of a property or characteristic which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See MPEP 2112 and 2112.01. When the Examiner has provided a sound bases for believing that the products of the applicant and the prior art are the same, the burden of proof is shifted to the applicant to prove that the product shown in the prior art does not possess the characteristics of the claimed product. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 7, Park discloses that the nanofilm is made by ion bean deposition, and does not disclose that the nanofilm is synthesized by physical vapor

deposition. However, the courts have held that the method of forming the product is not germane to the issue of patentability of the product itself. "[Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from the product of prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Response to Arguments

Applicant's prior art arguments filed 5/7/2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795